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From: Patrick Luckow
Sent: Wed 4/29/2015 5:34:19 PM
Subject: CO2 performance standards key assumptions

Hi Robyn,

This is a list of key working assumptions in state demonstrations, primarily pulled from what we have sent earlier, with the addition of a few others required to audit any detailed modeling (whether dispatch or spreadsheet based) done in the development of state plans.

Key required assumptions to increase transparency:

- EGU-specific key assumptions

- Summary operational statistics: Annual generation, emissions, and capacity
- Model input assumptions
 - Heat rate
 - Fixed and Variable operations & maintenance
 - Annual capital investments
- For EE/RE, load shapes are important, as well as the annual capacity factor.
- In order to know how they are implementing building block 2, you would also want to know any other specific constraints they have imposed in their analysis, such as energy or emissions limits.

- State-specific assumptions

- Load forecast
 - Annual Capacity Requirements
 - Annual Energy Requirements
 - Planning reserve margin assumptions

- Assumed fuel prices
- Emissions costs (CO₂, SO₂, and NO_x at a minimum)
- Resource additions – both new thermal units and EE/RE, including the generation and capacity
 - For any new units included in modeling, you're going to want to know the assumed capital cost, in addition to the parameters in the EGU-specific section above.
- Other regulatory requirements assumed, such as RPS policies or environmental regulations affecting thermal units

Two tables showing the annual capacity and energy balance would be a helpful auditing tool. Such tables would include all resources expected to generate in a given year, and demonstrate how they add to the total capacity and energy requirements. Such a table would also show imports or exports.

It would also be valuable to have some description of how the reference case was developed and how uncertainty in any of the key assumptions above were considered, such as a different gas price forecast, or different assumptions about the behavior of neighboring states.

-Patrick